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The Epidemiology of Lung Cancer

Recent Trends

Ernest L. Wynder, MD; Kiyohiko Mabuchi, MD; and Edward J. Beattie, Jr., MD

A retrospective epidemiologic investigation of 350 lung cancer patients confirmed the close association between cigarette smoking and lung cancer, particularly of the squamous and oat cell types. New trends in this study show that there is a decrease in relative risk for those patients developing lung cancer ten years after they have switched to filter cigarettes, possibly due to the lower "tar" content in filter cigarettes smoked by these patients. The risk also declines after complete cessation of smoking and appears to approach the level of nonsmokers after 13 years of not smoking. Further efforts to produce less harmful tobacco products should be continued and expanded although no smoking or cessation of smoking is the most effective prevention against lung cancer.

With a wealth of epidemiologic studies on the etiology of lung cancer in the literature, it may not seem worth the effort to report yet again on the environmental background of a group of lung cancer patients.[1-4] However, such a study is of value if it can show evidence of changes, particularly in time trends, in the epidemiological background of these patients.

In a great many epidemiologic studies, it has been found that, among cigarette smokers, the risk of lung cancer increases with the number of cigarettes smoked per day.[1-4] In other words, there is a dose-response relationship. This suggests that reducing dosage by means of reducing the concentration of the smoke from each cigarette might have the same effect as reducing the number of cigarettes smoked per day. If "tar" is the principal harmful ingredient, then it would be sufficient to reduce the concentration of the tar.

The Hammond study on ex-smokers aged 50 to 69 years who had smoked 20 or more cigarettes daily, shows that after ten years of not smoking they have a death rate similar to that of nonsmokers.[3]

These two pieces of evidence taken together suggest the following hypothesis:

> If tar is the principal lung cancer inducing factor then people who have switched from high tar cigarettes to low tar cigarettes should have lower rates of lung cancer than those who continue to smoke high tar cigarettes—this taking place ten or more years after the switch.

The present study was undertaken to test this hypothesis.

Methods of Study

Lung cancer patients admitted to the Memorial Sloan-Kettering Cancer Center in New York City are interviewed routinely about their background and social habits.

Each patient included in this report has a histologically-proven lung cancer and was interviewed between November 1966 and August 1969. The study group consisted of 210 men and 30 women with Kreyberg

From the Division of Environmental Cancerigenesis, Sloan-Kettering Institute for Cancer Research, and the Division of Epidemiology, American Health Foundation (Drs. Wynder and Mabuchi) and the Department of Surgery, Memorial Hospital for Cancer & Allied Diseases, New York (Dr. Beattie).

Reprint requests to 2 E End Ave, New York 10021 (Dr. Wynder).